

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in the application.

1. (Currently Amended): An R-Fe-B alloy based thin film magnet comprising an R-Fe-B based alloy which contains 28 to 45 percent by mass of R element (where R represents at least one type of rare-earth lanthanide elements) and which is ~~physically formed~~ deposited by a physical film forming method into an alloy film,

wherein the alloy film has a thickness is 0.2 to 400 μ m, and

wherein the R-Fe-B based alloy has a composite texture comprising R₂Fe₁₄B crystals grown by heat treatment of said alloy film and having a crystal grain diameter of 3 to 30 μ m and R-element-rich grain boundary phases formed by the heat treatment present at boundaries between the crystals, and having a nucleation type coercive force.

2. (Previously Presented): The R-Fe-B alloy based thin film magnet according to Claim 1, wherein c axes, which are easy-to-magnetize axes, of R₂Fe₁₄B crystals are oriented randomly or oriented nearly perpendicularly to a film surface.

3. (Cancelled):

4. (Withdrawn-Currently Amended): A method for preparation of the R-Fe-B alloy based thin film magnet ~~according to one of Claim 1 or 2~~, the method comprising the step of:

forming an alloy film having a thickness of 0.2 to 400 μ m by depositing by a physical film forming method an R-Fe-B based alloy which contains 28 to 45 percent by mass of R element (where R represents at least one type of rare-earth lanthanide elements);

heating the R-Fe-B based alloy in a vacuum or in a non-oxidizing atmosphere to 800°C to 1,200°C during physical alloy film formation or/and the following heat treatment, so as to grow crystal grains to diameters of 3 to 30 μ m and form R-element-rich grain boundary phases present at boundaries between the crystals,

whereby obtaining the R-Fe-B alloy based thin film magnet comprising an R-Fe-B based alloy which contains 28 to 45 percent by mass of R element (where R represents at least one type of rare-earth lanthanide elements) and which is deposited by a physical film forming method into an alloy film, wherein the alloy film has a thickness is 0.2 to 400 μ m, and wherein the R-Fe-B based alloy has a composite texture comprising $R_2Fe_{14}B$ crystals grown by heat treatment of said alloy film and having a crystal grain diameter of 3 to 30 μ m and R-element-rich grain boundary phases formed by the heat treatment present at boundaries between the crystals, and having a nucleation type coercive force.